

ABSTRACT

The present invention provides a hydrogen occluding material which occludes much more hydrogen than conventional alkali metal hydride (such as  $\text{NaAlH}_4$ ) through reversible reactions and yet permits hydrogen occlusion and release in one stage at a lower operating temperature, and a method for using said hydrogen occluding material.

A hydrogen occluding material which comprises an aluminum hydride represented by the formula (1) below.



(where  $0 \leq x \leq 3.$ )

A method for using a hydrogen occluding material, said method comprising hydrogenating and/or dehydrogenating at  $200^\circ\text{C}$  or below a hydrogen occluding material composed of an aluminum hydride represented by the formula (1) above.